

Blue section

PULLING AND
EXTRACTING TOOLS

Yellow section

GENERAL
GARAGE TOOLS

Red section

PANEL BEATING
TOOLS



2195 MASSON ST.
MONTREAL 34

National Distributors
JOS. ST. MARS EASTERN LIMITED

JOS. ST. MARS LIMITED
103 PRINCESS ST., WINNIPEG 2

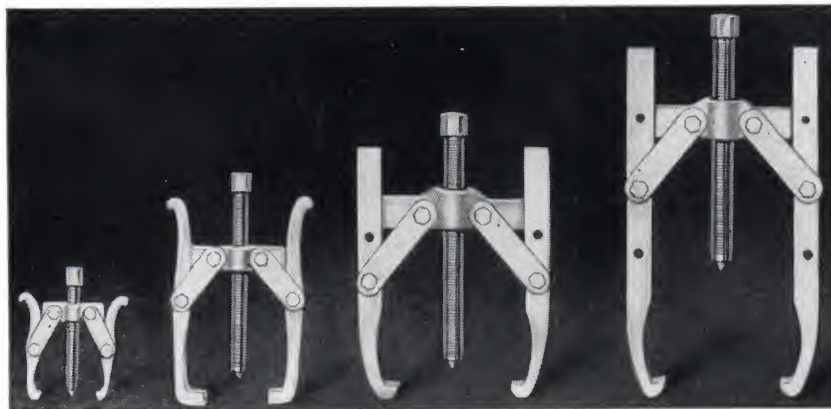
67 COLVILLE RD.
TORONTO 15



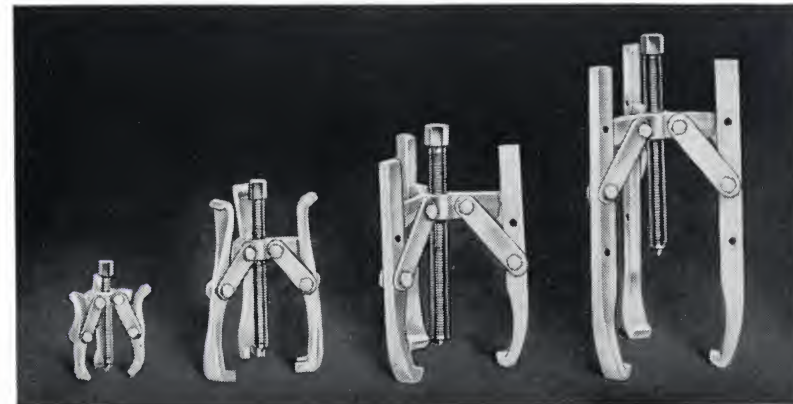
CATALOGUE TPCI C



TWIN AND TRIPLE



GRIP GEAR PULLERS



COMPLETE PULLERS

Puller No.	Type	Specification		
		Maximum spread	Maximum reach	Size of centre screw
830	Twin	0—6 in.	3½ in.	6 x ½ in.
827	Triple	0—150 mm.	82 mm.	
831	Twin	0—8 in.	5½ in.	9 x ⅝ in.
828	Triple	0—200 mm.	140 mm.	
832	Twin	0—12 in.	10 in.	12 x 1 in.
829	Triple	0—300 mm.	254 mm.	
833	Twin	0—14 in.	15 in.	12 x 1 in.
834	Triple	0—350 mm.	381 mm.	
866	Twin	0—20 in.	21 in.	15 x 1½ in.
867	Triple	0—500 mm.	546 mm.	
868	Twin	0—26 in.	28 in.	15 x 1½ in.
869	Triple	0—650 mm.	710 mm.	

Self-locking linkage system, which ensures that the jaws cannot slip off the work—the harder the pull the tighter the jaws grip.

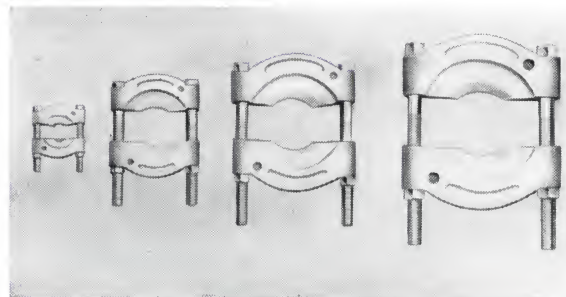
Smaller pullers have reversible jaws. Heavy duty types have adjustable jaws.



Bearing Pulling Attachments (Separators)

FOR USE WITH TWIN GRIP PULLERS

Extra thin edges fit behind bearings, etc., where space prevents use of normal puller jaws. Twin grip puller can be applied across the holding bolts or separator body. Also for use with Bearing Pulling Units.



Bearing Separator No.	Capacity		Use with	
	in.	mm.	Twin grip gear puller	Bearing puller
950	0—2½	0—57	830	940
951	½—4½	13—108	831	941
952	1—5½	25—146	832, 833, 866	942
953	1—7½	25—190	866, 868	943

TWIN AND TRIPLE GRIP GEAR PULLER SPARE PARTS

FOR CONVERSION & REPLACEMENT

All component parts of the full gear puller range are available individually to enable users to build up kits as required—taking advantage of the interchangeability of components.

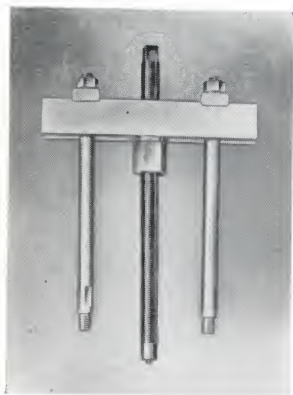
Component Part	Gear Puller No.		
	830 & 827	831 & 828	832 & 829
Twin head	827-2H	828-2H	829-2H
Triple head	827-3H	828-3H	829-3H
Jaw assembly	827-J	828-J	829-J
Pulling arm only	827-L	828-L	829-L
Centre screw	827-S	828-S	829-S

Component Part	Gear Puller No.		
	833 & 834	866 & 867	869 & 869
Twin head	829-2H	867-2H	869-2H
Triple head	829-3H	867-3H	869-3H
Jaw assembly	833-J	867-J	869-J
Pulling arm only	833-L	867-L	869-L
Centre screw	829-S	867-S	869-S

HYDRAULIC PULLERS

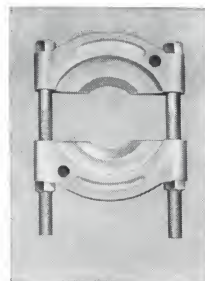
Gear Pullers Nos. 866, 867, 868, 869 and Bearing Pullers in the Nos. 932 and 933 series are also available with the new Manudraulic Power Units. For details see special Hydraulic Puller List.

PUSH PULL TYPE



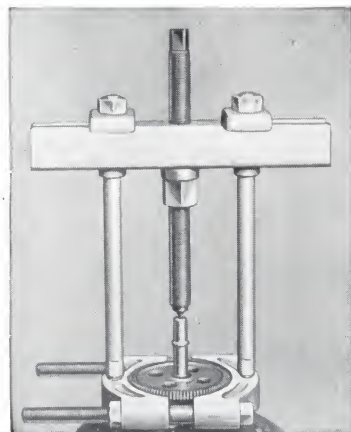
Push-Pull Type Pulling Unit

Bearing Pullers comprise a Push-pull Type Pulling Unit with the appropriate size of Bearing Separator.

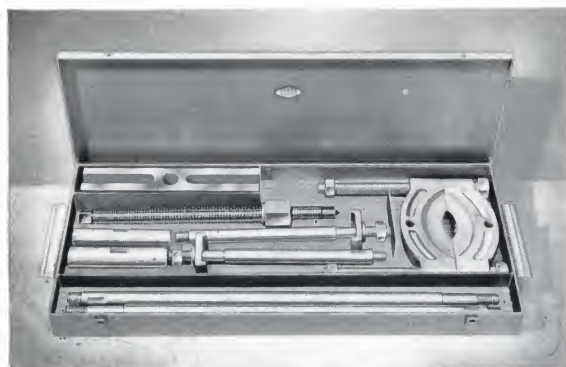


Bearing Separator

Separators are fully detailed overleaf.



Complete Puller in operation



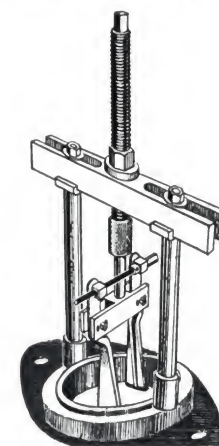
Bearing Puller Kit

	Tool No.	Description
LIGHT DUTY PULLER Capacity: 0— $2\frac{1}{2}$ in. 0—57 mm.	940	Pulling unit, $4\frac{1}{2}$ in. reach legs
	950	Separator 0— $2\frac{1}{2}$ in. 0—57 mm.
	930	No. 940 pulling unit with No. 950 Separator. Reach $4\frac{1}{2}$ in. 114 mm.
STANDARD DUTY PULLER Capacity $\frac{1}{2}$ — $4\frac{1}{2}$ in. 13—108 mm.	941	Pulling unit, includes 941-8 legs
	941-9	Pulling leg, reach $6\frac{3}{4}$ in. 171 mm.
	941-C	Pulling leg, reach $15\frac{1}{2}$ in. 400 mm.
Complete sets in metal cases	951	Leg connector
	931	Separator $\frac{1}{2}$ — $4\frac{1}{2}$ in. 13—108 mm.
	931-X	No. 941 pulling unit with No. 951 separator. Reach $6\frac{3}{4}$ in. 171 mm. No. 931 set as above plus 2 each legs 941-9 and connectors 941-C. Reach $6\frac{3}{4}$, $15\frac{1}{2}$, 29 in. 171, 400, 737 mm.
HEAVY DUTY PULLER Capacity 1— $5\frac{3}{4}$ in. 25—146 mm.	942	Pulling unit, includes 942-9 legs
	942-8	Pulling leg, reach $4\frac{1}{2}$ in. 114 mm.
	942-9	Pulling leg, reach $9\frac{1}{2}$ in. 241 mm.
Complete sets in metal cases	942-10	Pulling leg, reach $16\frac{1}{2}$ in. 419 mm.
	942-11	Pulling leg, reach $22\frac{1}{2}$ in. 571 mm.
	942-C	Leg connector.
Complete sets in metal cases	952	Separator 1— $5\frac{3}{4}$ in. 25—146 mm.
	932	No. 942 Pulling unit with No. 952 separator. Reach $9\frac{1}{2}$ in. 241 mm.
	932-X	No. 932 set as above plus 2 each legs 942-8, 942-10, 942-11 and connectors 942-C. Reach $4\frac{1}{2}$, $9\frac{1}{2}$, $16\frac{1}{2}$, $22\frac{1}{2}$, $32\frac{1}{2}$, $44\frac{1}{2}$ in.; 114, 241, 419, 517, 825, 1130 mm.
EXTRA HEAVY DUTY PULLER Capacity 1— $7\frac{1}{2}$ in. 25—190 mm.	943	Pulling unit, includes 943-9 legs.
	943-8	Pulling leg. Reach 8 in. 200 mm.
	943-9	Pulling leg. Reach 18 in. 450 mm.
Complete sets in metal cases	943-10	Pulling leg. Reach 28 in. 710 mm.
	943-C	Leg connector.
	953	Separator 1— $7\frac{1}{2}$ in. 25—190 mm.
Complete sets in metal cases	933	No. 943 pulling unit. with No. 953 separator. Reach 18 in. 450 mm.
	933-X	No. 933 set as above plus 2 each legs 943-8, 943-10 and connectors 943-C. Reach 8, 18, 28, 33, 53 in. 200, 450, 710, 838, 1346 mm.

BEARING PULLERS

INTERNAL PULLING ATTACHMENTS

For Use with Push-Pull Type Bearing Pullers



No. 935 in use with No. 942 Pulling unit with No. 935 A adaptor and No. 942 T thread protectors.

Adjuster on pulling attachment enables jaws to be locked behind the race.

Pulling unit is assembled for pushing with centre screw fitted into cross beam of attachment. Screws of heavy duty pullers are connected by means of adaptors. Thread protectors shield threads of pulling legs.

Tool No.	Capacity		Reach	
	in.	mm.	in.	mm.
935	$1\frac{1}{2}$ —6	38—150	4	100
936	$\frac{3}{4}$ —9	25—230	$5\frac{1}{8}$	150

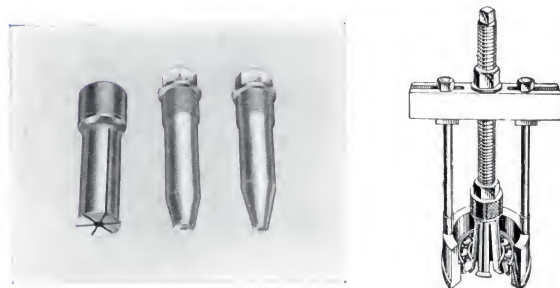
Tool No.	For use with	Use screw adaptor	Use thread protector
935	941 pulling unit	None	941-T
	931 and 931-X sets		
	942 pulling unit	935-A	942-T
936	942 pulling unit	1935-A	
	943 pulling unit	936-A	943-T
	933 and 933-X sets		
	1943 pulling unit	1936-A	



INTERNAL RACE AND BEARING EXTRACTORS

FOR USE WITH PUSH-PULL TYPE PULLING UNIT No. 941

No. 958 Internal Race Extractor Set
Capacity $\frac{1}{2}$ in.—2 in. 13—50 mm.



No. 958 set comprises one each extractors 958 A, B, C, D, E; with 958-R reducer; complete in metal case. This set should be used with No. 941 pulling unit and No. 941-T thread protectors.

No.	Description	Capacity	
		in.	mm.
958-A	Extractor with 2 expanders	$\frac{1}{2}$ — $\frac{3}{4}$	13—17
958-B	Extractor with 2 expanders	$\frac{3}{4}$ — $1\frac{1}{4}$	16.6—24.6
958-C	Extractor with 2 expanders	$1\frac{1}{4}$ — $1\frac{3}{4}$	23—31
958-D	Extractor with 2 expanders	$1\frac{3}{4}$ — $2\frac{1}{4}$	30—39
958-E	Extractor with 2 expanders	$1\frac{3}{4}$ —2	38—50
958-R	Reducer to connect A, B and C to screw of 941 unit		

No. 938 Combined Internal and External Pulling Set for Bearings and Races

Capacity: Internal: $\frac{1}{2}$ —6 in. (13—150 mm.); External: $\frac{1}{2}$ —4 $\frac{1}{4}$ in. (13—108 mm.)

Comprises No. 941 Push-pull type pulling unit; No. 941-9 additional pulling legs (pr.); No. 941-C leg connectors (pr.); No. 941-T thread protectors (pr.); No. 951 bearing separator; No. 958-A/B/C/D/E internal extractors; No. 958-R reducer; No. 935 internal pulling attachment complete in metal storage case.



This set is equivalent to No. 931-X bearing puller plus internal pulling attachment No. 935 and race extractors No. 958; also No. 941-T thread protectors.

SLIDE HAMMER PULLER



For Internal and External Work

Capacity: Internal: $\frac{1}{2}$ —4 $\frac{1}{4}$ in. (13—108 mm.); External: 0—3 in. (0—75 mm.)

Supplied with twin and triple heads and two sets of three reversible pulling arms.

Special adjusting cone locks the jaws on the job internally or externally.

No. 854 Slide Hammer Puller Set.

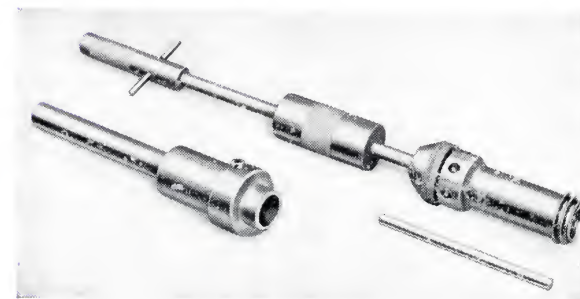
Complete kit for both twin and triple internal and external applications. Supplied in carton.



No. 854-X Slide Hammer Puller Set

Complete kit as No. 854 but supplied in metal storage case

OIL SEAL EXTRACTOR AND REPLACER



For removal of oil seals on 1 $\frac{3}{8}$ in. and 1 $\frac{1}{2}$ in. shafts as used on most cars. Taper thread is inserted into seal which is withdrawn by shock action of sliding hammer.

No. 856 Extractor with tommy bar.

No. 855 Drift for fitting seals, 1 $\frac{3}{8}$ in. and 1 $\frac{1}{2}$ in.

No. 857 Set—comprising Drift, Extractor and Slide Hammer Puller Unit (as illustrated).

No. 858 Set—as No. 857 less No. 855 Drift.

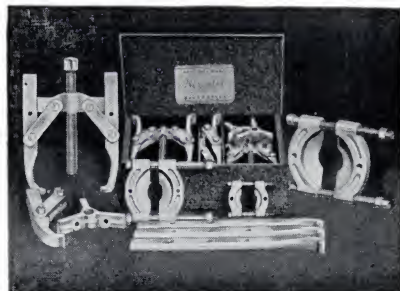
No. 856 Extractor can be used with Sykes No. 854 Slide Hammer Puller.

Twin & Triple Grip Gear Puller Combination Sets



Each twin grip puller can be converted into the corresponding triple grip puller by the addition of the appropriate triple puller head and an extra jaw assembly. These Combination Puller Sets exploit this interchangeability and enable comprehensive sets to be made available at low cost.

No. 849 set. 6 and 8 in. capacity



All Gear Puller Kits also available with appropriate sizes of Bearing Separators.

Set No.	Includes Separators	Provides Pullers
847	—	830, 827
847-X	950	
848	—	831, 828
848-X	951	
849	—	830, 831, 827, 828
849-X	950, 951	
842	—	830, 831, 832, 833
842-X	950, 951, 952	827, 828, 829, 834

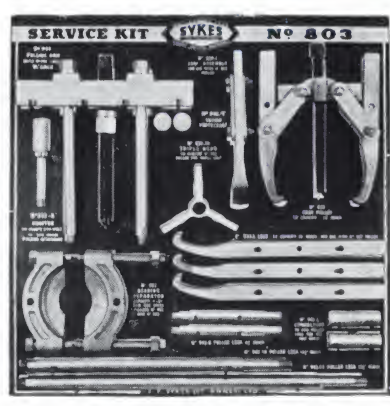
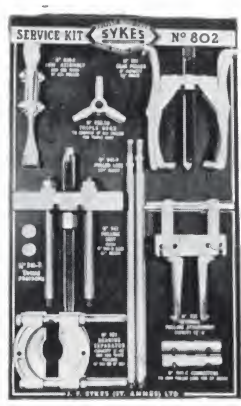
Sets Nos. 849, 849-X, 842 and 842-X supplied in attractive metal storage case.

No. 842-X Set. 6, 8, 12 and 14 in. capacity with Bearing Separators



GEAR & BEARING

PULLER SERVICE KITS



Kits with suffix -K are in Steel Storage Cases in place of wall panels

Comprehensive puller kits on storage panels for wall mounting in workshop or store. Removal of any tool reveals a shadow outline. Supplied complete with carplates for fixing to wall or in attractive steel storage cases.

These kits utilise both twin and triple gear pullers and push-pull type bearing pullers. Full use is made of the interchangeability of components to provide comprehensive pulling tool sets without costly duplication.

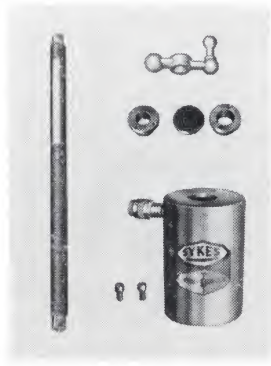
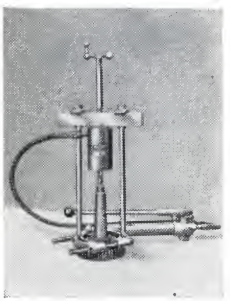
Kit No.	Contents			
	Gear pullers in combination	Bearing puller	Internal attachment	Other items
801	830, 827	930	—	854 Slide hammer puller
801-K				
802	831, 828	931-X	935	941-T Thread protectors
802-K				
803	832, 833, 829, 834	932-X	—	935-A adaptor
803-K				
806	866, 867	932-X	935	935-A adaptor 942-T thread protectors
806-K				
807	868, 869	933-X	936	936-A adaptor 943-T thread protectors
807-K				



POWER UNITS FOR USE WITH HEAVY DUTY PULLERS

New Centre Hole Ram Provides Rapid Manual Adjustment with Powerful Hydraulic Action

Twin and Triple Grip Gear Pullers



Puller No.	Type	Specification	Use with Manudraulic Ram No.
1866	Twin	As Mechanical Puller 866	1001 (20 ton)
1867	Triple	As Mechanical Puller 867	
1868	Twin	As Mechanical Puller 868	1002 (30 ton)
1869	Triple	As Mechanical Puller 869	

Except for the hydraulic type heads these pullers are identical to mechanical Pullers Nos. 866, 867, 868 and 869.

For alternative mechanical use it is only necessary to purchase the appropriate centre screw with twin or triple head.



No. 1001 Manudraulic Ram Unit — 20 tons capacity
No. 1002 Manudraulic Ram Unit — 30 tons capacity
 Each Manudraulic ram unit comprises centre hole ram with threaded, solid and smooth adaptors which screw into ram plunger; two fixing studs for fitting ram to puller cross bars, centre screw, adjusting handle.

No. 1005 Hydraulic Pump for Manudraulic Ram Units
 A sturdy rapid, action pump delivering 10,000 lb. per square inch into a six foot reinforced hose fitted with quick couplers. All pumps are fitted with safety relief valve. Suitable for both 20 ton and 30 ton rams.

Push-Pull Type Bearing Pullers

Pulling Unit No.	Specification	Use with Manudraulic Ram No.
1942	As Mechanical Unit 942	1001 (20 ton)
1943	As Mechanical Unit 943	1002 (30 ton)



Bearing Separators Nos. 952 and 953 are used with Pulling Units Nos. 1942 and 1943 respectively.



Internal Pulling Attachments Nos. 935 and 936 are used with Pulling Units Nos. 1942 and 1943 respectively.

Except for the Hydraulic type heads these pullers are identical to mechanical pullers 942 and 943.

All additional pulling legs and other attachments fit the hydraulic pulling units.



HUB PULLERS AND SPECIAL



UNIVERSAL STUD TYPE HUB PULLERS

Centre screw is mounted in sliding bearing to provide shock type action by bumping screw head—without risk of damage to the tool. Floating cap on screw ensures that tool remains in correct centre during use. All tools supplied with hammer type handle.

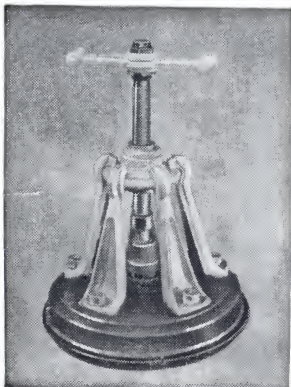
General garage model, capacity $7\frac{1}{2}$ in. 190 mm.

No. 825/3 3 arms for 3 and 6 stud hubs.
No. 825/4 4 arms for 3, 4 and 6 stud hubs.
No. 825/5 5 arms for 3, 4, 5 and 6 stud hubs.
No. 825/L Spare pulling arm for above. 7 in. 178 mm.

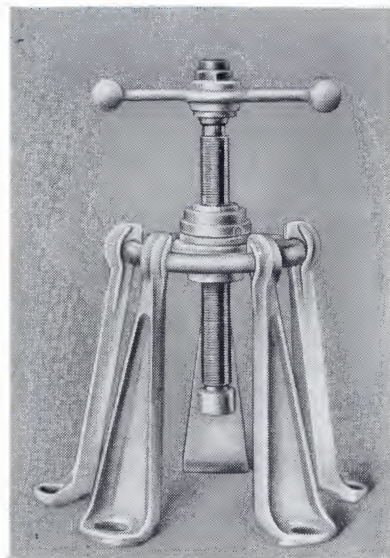
Commercial model, capacity 12 in. 305 mm.

No. 822/3 3 arms for 3 and 6 stud hubs.
No. 822/5 5 arms for 3, 4, 5 and 6 stud hubs.
No. 822/6 6 arms for 3, 4, 5 and Heavy Commercial 6 stud hubs.
No. 822-L Spare pulling arm for above. 9 $\frac{1}{4}$ in. 235 mm.

No. 822/L arms can be used with No. 825 series pullers where additional reach is required.



No. 825 5 General Garage Model Hub Puller.



No. 822/5 Commercial Model Hub Puller

HUB PULLER SERVICE KIT



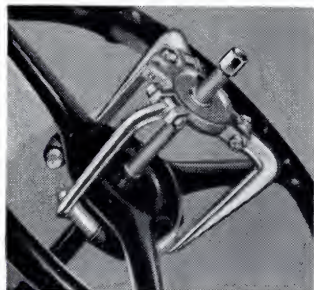
No. 805

Service Kit

Covers Hub removal on 90% of modern vehicles. Also many other useful applications.

No.	Contents
825/5	Stud type hub puller with hammer handle and five pulling arms.
822/6	Stud type hub puller with six pulling arms for commercial work.
825-F	Flange type assembly (locking ring, retainer plate, spring clip and three flange type arms)
835	Steering wheel puller.
818	Ball joint puller.
819	Ball joint puller, commercial size.
239	Cylinder head lifter.
805-P	Storage panel 2 ft. 6 in. x 2 ft. 6 in.
805	Service Kit complete.

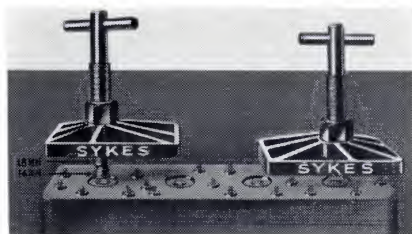
STEERING WHEEL PULLER



No. 835. Steering Wheel Puller.

Complete with two steel pulling rings, each with three rubber cushions. Small pulling ring for normal use — large ring for modern cars with steering column gear change.

CYLINDER HEAD LIFTER

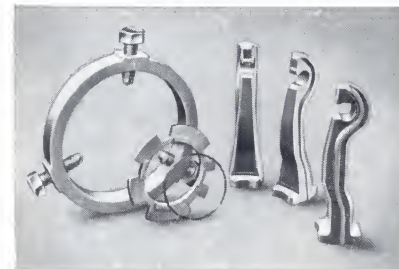


No. 239. Cylinder Head Lifter

Comprises two plates and two screws threaded 14 mm. and 18 mm. with hexagon turn down nuts.

AUTOMOTIVE PULLERS

FLANGE TYPE HUB PULLER



No. 825-F Flange type assembly
Three flange type pulling arms; locking ring and spacing plate for use in conjunction with No. 825 Hub Puller. This assembly covers all Ford vehicles.



No. 825-A Flange type puller complete.
Comprising 825-F assembly mounted on power unit of No. 825 Puller, complete with handle.

COMBINATION HUB PULLER SETS



No. 826/5 Puller Set

Set No.	Comprising
826/3	No. 825/3 Puller with No. 825-F Assembly
826/5	No. 825/5 Puller with No. 825-F Assembly

Complete in metal cases

STEERING BALL JOINT PULLERS

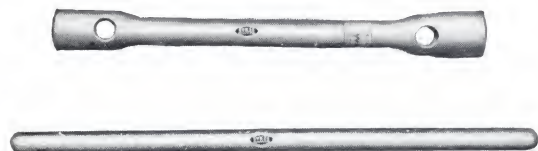
No. 818. Fits most private cars and light trucks with No. 819 covering the heavier commercial vehicles.

	Jaw opening	Throat opening
No.	in. mm	in. mm
818	$\frac{11}{16}$ 17.5	2 50.8
819	1 25.4	2 $\frac{1}{8}$ 54





HEAVY DUTY COMMERCIAL WHEEL NUT WRENCHES



Forged from heavy bars of alloy steel and carefully heat-treated, making a powerful tool that will stand heavy use. Finished in rust proof satin nickel.

STANDARD DOUBLE ENDED WRENCHES

Wrench	Openings across Flats		
	Hexagon		Square
	in.	in.	in.
No. M34	1 1/8	1 1/2	1 3/8
No. M35	1 3/8	1 3/4	1 5/8
No. M36	1 7/8	1 7/8	—
No. M37	1 1/2	1 1/2	—
No. W44	1.100 (3/4 Whit.)	1.300 (3/4 Whit.)	—
No. W45	0.920 (1/2 Whit.)	1.200 (1/2 Whit.)	—

NEW TWIN OPENING WRENCHES

No. W51	1 1/2 in. Whit. (1.300 in.) - Both ends
No. W52	2 in. Whit. (1.100 in.) - Both ends

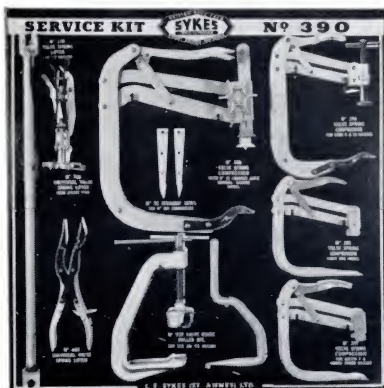
LEVERAGE BARS

No. M38 — 20 inches No. M39 — 30 in.

THE STRONGEST WRENCHES MADE

Fully Guaranteed

VALVE LIFTER SERVICE KIT



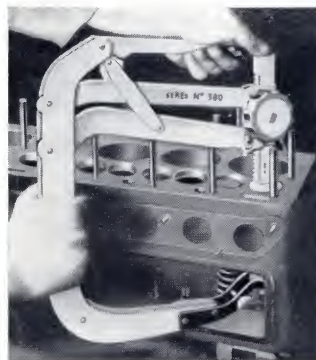
One each Valve Spring Compressors No. 380, 385, 395, 397, Valve Spring Lifters No. 600, 700, 245 and Valve Guide Puller Set No. 920 mounted on timber storage panel 2ft. 6in. x 2ft. 6in. complete with ear plates for wall mounting.

No. 390. Service Kit complete.

UNIVERSAL VALVE SPRING LIFTERS AND COMPRESSORS

Parallel Lift - Cam Action

Made from heavy gauge steel pressings, spin rivetted to ensure rigid yet free moving parts.



No. 380. General Garage Model.

Serves most truck and car engines. Geared hand wheel adjustment and rapid cam action. Supplied with both cranked and straight spring tempered jaws.

Spare jaws No. 32 (cranked), No. 35 (straight).

No. 385. Light Car Model.

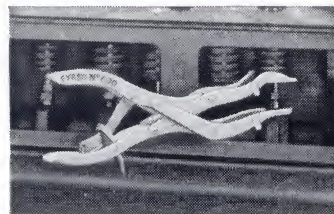
This junior version of the No. 380 will service most car engines. Thumb screw adjustment and fast operating parallel lift.

Spare jaws No. 37.

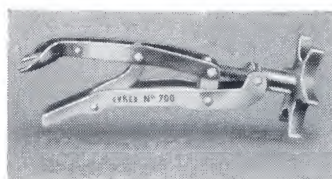


No. 600. Popular Scissor Type Model

Adjustable offset jaws for nearly all "L" head motors. Parallel lift with ratchet lock.

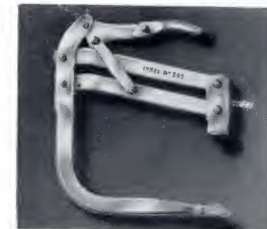


No. 700. High Offset Lifter



A new stubby model specially produced for modern deep set engines. Only 8 in. long, hand wheel operation, locks in any position.

Special Small Car Models



No. 395. Ford 8 and 10 h.p. Model. No adjustments needed. Operates with one movement of the handle.

No. 397.

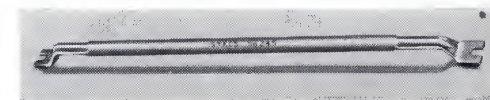
Compressor. Identical to No. 395 but with opening to suit Austin 7 and Morris 8.

NEW. No. 399 Universal Small Car Valve Spring Compressor

Rapid screw adjustment for various motors and swift lever action. For most small engines including Ford 8, 10 and 100E, Austin A35, A40, Sprite, Morris Minor and the full range of B.M.C. Mini-cars.



No. 245. Bar Type Lifter



Designed for use on V8 motors, 30 in. long with forged jaw at each end.

VALVE GUIDE PULLER



For Ford V8 (30 h.p.) and Lincoln-Zephyr, Mercury Ford four-cylinder and tractor. Tap out retainer with Driver No. 917 then set puller in place and turn down handle.

No. 918. Puller only.

No. 917. Retainer Driver.

No. 920. Valve Guide Puller Set comprising No. 917 Driver and No. 918 Puller.



SCREW EXTRACTORS

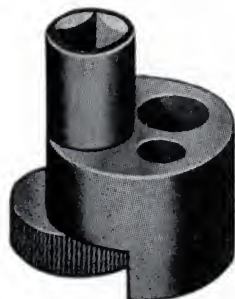


Straight Flutes - No Taper
Range $\frac{1}{4}$ inch to $\frac{1}{2}$ inch

With this type of extractor broken studs can be removed without dismantling and costly delay. The parallel fluted extractors represent a great improvement over the taper type which tend to expand the drilled out screw and make it bind in position. For screws broken off below the surface the drill guides are used to ensure correct position of centre hole.

Set No.	Extractors	Drill Guides	Drills	Wrench	Package
880	5	10	5	1	Metal Case
881	5	10	—	1	Plastic Roll
882	5	—	—	1	Carton

STUD SETTER AND EXTRACTOR



Operates on the gear principle for gripping, develops tremendous power, cannot slip and will not lock on the job. For use with $\frac{1}{2}$ in. square drive. Capacity $\frac{1}{4}$ in. to $\frac{3}{4}$ in.

No. 820
Stud Setter and Extractor.

No. 821. 5 in. Extension with Tommy Bar.

CYLINDER RIDGE REAMERS



Removes the unworn ridge from the cylinders of all cars and trucks within its capacity; including recessed head types. Each blade is piloted giving three point bearing for accurate reaming.

Set No.	With Blades	Range	
		inches	mm.
171	171-S	2 $\frac{3}{16}$ —3 $\frac{3}{16}$	55.5—81
172	172-M	2 $\frac{9}{16}$ —3 $\frac{3}{4}$	65—95
	172-L	3 $\frac{3}{4}$ —4 $\frac{7}{8}$	95—124

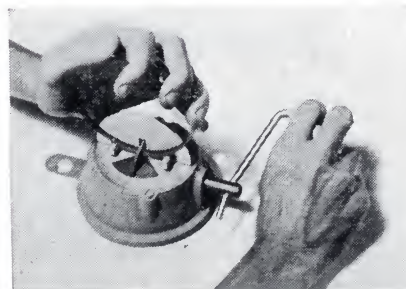
Both sets include blade holding plates for each set of blades, operating knob and full instructions. Each set supplied in metal storage case.

No. 875. PISTON RINGER

Removes and installs all styles and makes of piston rings up to $4\frac{1}{2}$ in. (114 mm.) diameter. Pressed steel construction. Plated finish.



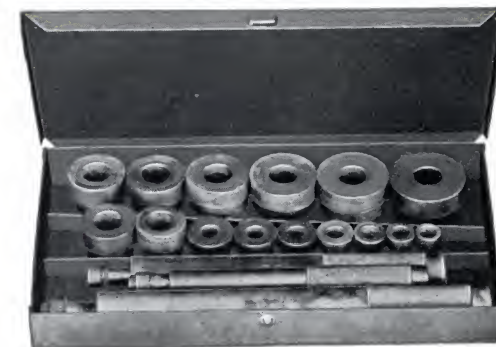
No. 870. PISTON RING FILER



No. 871. Spare Cutter File.

Rings are filed perfectly parallel by holding them against the vertical guide plates, resting on the pins, so the ends bear on the sides of the cutter file, one on each side.

BUSHING REMOVER AND INSERTING SETS



Set No. 815 is designed for general garage use and No. 816 covers bushes on commercial vehicles and heavy equipment.

Set No.	Range Inside diameter	Drivers	Handles
815	$\frac{3}{32}$ in. — $1\frac{1}{4}$ in.	17	3
816	$1\frac{5}{16}$ in. — $1\frac{3}{4}$ in.	7	1

Both sets in metal case.

THREAD CHASER



Threaded shafts are fluted for easy elimination of chips and the hex box body is operated by a spark plug socket or wrench. Sized for 14 and 18 metric threads.

No. 841. Thread Chaser. Overall length $3\frac{1}{2}$ in.

BRAKE SPRING PLIER



For quick and easy removal and replacement of brake shoe springs on most cars equipped with internal brakes.

No. 893. Spring Brake Plier.



UNEVEN NUMBER OF ANGLED BLADES TO REDUCE CHATTER.

Proved by many years of experience to be a vast improvement over straight blade types. Sizes A and B have five blades and all larger sizes have seven blades set at an angle to give a shearing cut. The extra blade and retaining collars make the tool more solid and less liable to chatter.

Spare nuts, collars and sets of blades are available for this range of reamers.

Miniature Reamers

Symbol	Range		No. of Blades
	inches	Mm.	
8A	$\frac{1}{16}$ — $\frac{9}{32}$	6.34 — 7.14	4
7A	$\frac{3}{32}$ — $\frac{1}{8}$	7.14 — 7.93	4
6A	$\frac{5}{16}$ — $\frac{11}{32}$	7.93 — 8.73	4
5A	$\frac{3}{8}$ — $\frac{7}{16}$	8.73 — 9.52	4
4A	$\frac{1}{2}$ — $\frac{9}{16}$	9.52 — 10.31	4
3A	$\frac{5}{8}$ — $\frac{7}{8}$	10.31 — 11.11	5
2A	$\frac{7}{8}$ — $\frac{15}{16}$	11.11 — 11.90	5

PRECISION PILOTED REAMERS



Identical in quality to the standard "57" series expanding reamers these precision pilot reamers have double taper bushes on the fixed pilot shank.

INDIVIDUAL PRECISION PILOT REAMERS

Symbol	Range		No. of Blades
	inches	Mm.	
AR/57	$\frac{15}{32}$ — $\frac{17}{32}$	11.90 — 13.49	5
BR/57	$\frac{17}{32}$ — $\frac{19}{32}$	13.49 — 15.08	5
CR/57	$\frac{19}{32}$ — $\frac{21}{32}$	15.08 — 16.66	7
DR/57	$\frac{21}{32}$ — $\frac{23}{32}$	16.66 — 18.25	7
ER/57	$\frac{23}{32}$ — $\frac{25}{32}$	18.25 — 19.84	7
FR/57	$\frac{25}{32}$ — $\frac{27}{32}$	19.84 — 21.43	7
GR/57	$\frac{27}{32}$ — $\frac{29}{32}$	21.43 — 23.81	7
HR/57	$\frac{29}{32}$ — $\frac{31}{32}$	23.81 — 26.98	7
IR/57	$\frac{31}{32}$ — $\frac{1}{16}$	26.98 — 30.16	7



SERIES 57 HAND EXPANDING REAMERS

CUTTERS IN 18% TUNGSTEN HIGH SPEED STEEL

INDIVIDUAL REAMERS

Symbol	Range		No. of Blades
	inches	Mm.	
A/57	$\frac{15}{32}$ — $\frac{17}{32}$	11.90 — 13.49	5
B/57	$\frac{17}{32}$ — $\frac{19}{32}$	13.49 — 15.08	5
C/57	$\frac{19}{32}$ — $\frac{21}{32}$	15.08 — 16.66	7
D/57	$\frac{21}{32}$ — $\frac{23}{32}$	16.66 — 18.25	7
E/57	$\frac{23}{32}$ — $\frac{25}{32}$	18.25 — 19.84	7
F/57	$\frac{25}{32}$ — $\frac{27}{32}$	19.84 — 21.43	7
G/57	$\frac{27}{32}$ — $\frac{29}{32}$	21.43 — 23.81	7
H/57	$\frac{29}{32}$ — $\frac{31}{32}$	23.81 — 26.98	7
I/57	$\frac{31}{32}$ — $\frac{1}{16}$	26.98 — 30.16	7
J/57	$\frac{1}{16}$ — $\frac{3}{32}$	30.16 — 34.13	7
K/57	$\frac{3}{32}$ — $\frac{1}{8}$	34.13 — 38.09	7
L/57	$\frac{1}{8}$ — $\frac{1}{4}$	38.09 — 46.03	7
M/57	$\frac{1}{4}$ — $\frac{1}{2}$	46.03 — 56.35	7

DETACHABLE REAMER PILOTS



For Hand Expanding Reamers. Suitable for use with most makes of Reamers.

INDIVIDUAL PILOTS

Symbol	Reamer Size inches	Length inches
A	$\frac{15}{32}$ — $\frac{17}{32}$	5
B	$\frac{17}{32}$ — $\frac{19}{32}$	5
C	$\frac{19}{32}$ — $\frac{21}{32}$	5
D	$\frac{21}{32}$ — $\frac{23}{32}$	6
E	$\frac{23}{32}$ — $\frac{25}{32}$	6
F	$\frac{25}{32}$ — $\frac{27}{32}$	6
G	$\frac{27}{32}$ — $\frac{29}{32}$	6
H	$\frac{29}{32}$ — $\frac{31}{32}$	6
I	$\frac{31}{32}$ — $\frac{1}{16}$	6
J	$\frac{1}{16}$ — $\frac{3}{32}$	6
K	$\frac{3}{32}$ — $\frac{1}{8}$	6
L	$\frac{1}{8}$ — $\frac{1}{4}$	6
M	$\frac{1}{4}$ — $\frac{1}{2}$	6

Extension shanks for reamers sizes 8A—2A.

COMPLETE SETS IN ATTRACTIVE METAL CASES



No. 3/57 Combination Set Reamers and Pilots

EXPANDING REAMERS

Set No.	Containing	Range inches
1/57	Sizes A/57 — H/57	$\frac{15}{32}$ — $\frac{1}{16}$
2/57	Sizes I/57 — L/57	$\frac{1}{16}$ — $\frac{1}{8}$
7/57	Sizes A/57 — I/57	$\frac{15}{32}$ — $\frac{3}{16}$
8/57	Sizes A/57 — L/57	$\frac{15}{32}$ — $\frac{1}{4}$
15	Sizes 8A — 2A	$\frac{1}{4}$ — $\frac{15}{16}$

PRECISION PILOTED REAMERS

Set No.	Containing	Range inches
17R/57	AR/57 — HR/57	$\frac{15}{32}$ — $\frac{1}{16}$
18R/57	AR/57 — IR/57	$\frac{15}{32}$ — $\frac{1}{16}$

DETACHABLE PILOTS

Set No.	Containing	Range inches
4	A — H	—
5	I — L	—
6	A — I	—
19	8A—2A Ext. Shanks	—

COMBINATION SETS REAMERS WITH PILOTS

Set No.	Containing	Range inches
3/57	A/57—H/57 with pilots	$\frac{15}{32}$ — $\frac{1}{16}$
9/57	I/57—L/57 with pilots	$\frac{1}{16}$ — $\frac{1}{8}$
10/57	A/57—I/57 with pilots	$\frac{15}{32}$ — $\frac{1}{4}$
16	8A—2A with Shanks	$\frac{1}{4}$ — $\frac{15}{16}$



NICKEL ALLOY STEEL CHISELS

FLAT - CROSS CUT - GOUGE - DIAMOND POINT

Type	Flat Cold						Cross Cut						Gouge						Diamond					
No.	301	302	303	304	305	306	310	311	312	313	314	315	320	321	322	323	324	325	330	331	332	333	334	335
Length	6	6	7	8	9	10	6	6	7	8	9	10	6	6	7	8	9	10	6	6	7	8	9	10
Stock	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	
Cut	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{1}{8}$	

These high quality chisels are forged from nickel alloy non-tempering steel and should not be confused with cheaper grades produced in cast steel.

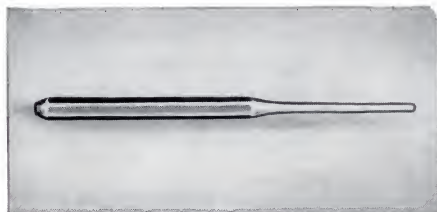
The cutting edges can be sharpened with a file when necessary.

Supplied in fully glazed and enamelled finish.

EXTRA LONG REACH FLAT COLD CHISELS

No.	Length	Stock	Cut
308	14	1	1
309	18	1	1

PARALLEL PIN PUNCHES

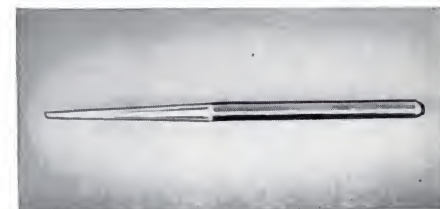


PUNCHES

IN CHROME VANADIUM STEEL

Type	Parallel Pin							Taper			
No.	340	341	342	343	344	345	346	360	350	351	352
Length	$4\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	$6\frac{1}{2}$	$6\frac{1}{2}$	7	$7\frac{1}{2}$	$4\frac{1}{2}$	8	9	11
Stock	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$
Point	$\frac{3}{32}$	$\frac{1}{8}$	$\frac{3}{32}$	$\frac{3}{16}$	$\frac{7}{32}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{1}{8}$	$\frac{1}{8}$	$\frac{5}{32}$	$\frac{1}{4}$

TAPER DRIFT PUNCHES



CENTRE PUNCHES



No. 370. $4\frac{1}{2}$ in. x $\frac{5}{16}$ in.

No. 371. 6 in. x $\frac{1}{2}$ in.

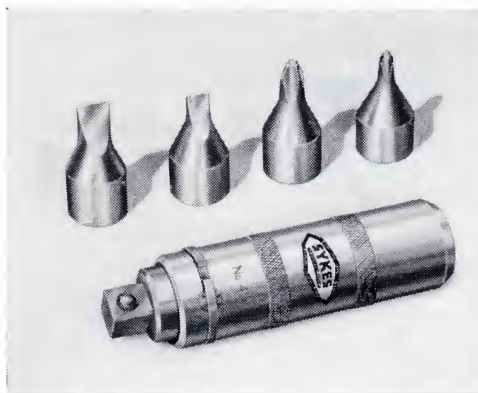
PRY BARS



No.	Length inches	Stock inches
361	13	$\frac{1}{2}$
362	18	$\frac{1}{2}$
363	24	$\frac{1}{2}$

A powerful jimmy bar for prying, alignment work and many other uses. Forged from nickel molybdenum steel. Fully plated with polished ends.

No. 401 IMPACT SCREW DRIVER



Loosens or tightens the toughest and most stubborn screws, nuts and bolts. A simple yet powerful tool which transmits the strength of a hammer blow into radial action. Driver bit is $\frac{1}{2}$ in. square drive which can be used with standard sockets. Supplied with $\frac{3}{8}$ in. and $\frac{1}{2}$ in. straight screwdriver bits also two bits for screws with recessed cross heads.

All dimensions on this page are quoted in inches

PUNCH AND CHISEL SETS

ALL COMPLETE
IN WOOD STAND

No. 348 Punch and Chisel Set



No.	Contents
347	Pin punches 340, 341, 342, 343, 344, 345, 346
348	Pin punches 340, 341; Taper drift 350; Centre punch 370; Flat chisels 301, 302; Cross cut 310
349	Taper drifts 360, 350, 351, 352; Centre punch 370



QUALITY PLIERS & CUTTERS

**DROP FORGED FROM
HIGH GRADE
ALLOY STEEL**

**INDUCTION
HARDENED**

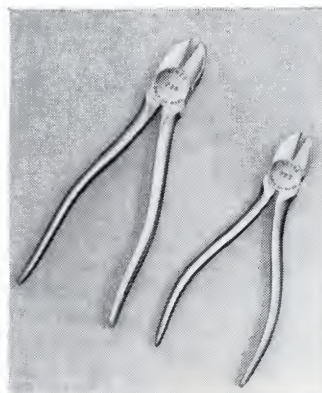
**LINE KNURLED
HANDLES**

**ACCURATELY ALIGNED
AND HAND
HONED CUTTERS**

Also available with insulated handles in yellow plastic. Suffix -X denotes insulated grips.



Combination Pliers



Diagonal Cutters



Long Nose Pliers



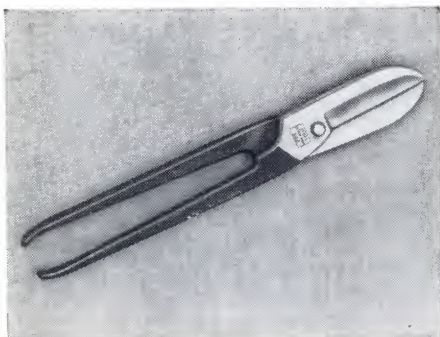
End Cutting Plier

Plier No.	Size ins.	Description
220 221	6½ 8	Side cutting long nose pliers
223 224	6 7½	Diagonal cutters.
225	7½	End (or top) cutters.
226 227	7 8½	Combination pliers with cutters
229	6	End stripping plier



End Stripping Plier

Straight Cut Tinmen's Shears

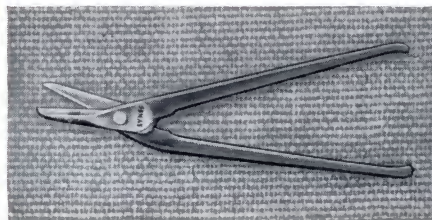


TIN SNIPS

No.	L'gth ins.	Type
601	8	Straight cut
602	10	Straight cut
603	12	Straight cut
605	12	Cranked
606	12	Cranked—special left hand

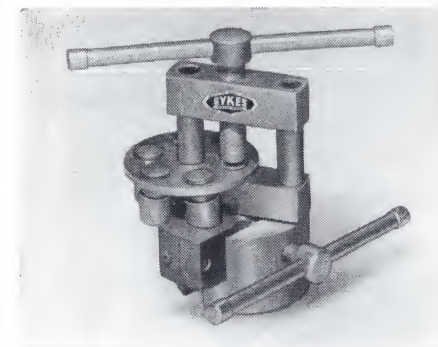
Heavy Duty Cranked Shears

Ground and polished blades of heavy section for really rugged use. Offset shanks for easy control on long cuts.



FLARING TOOLS

IMPROVED MODEL No. 264 DOUBLE FLARING TOOL



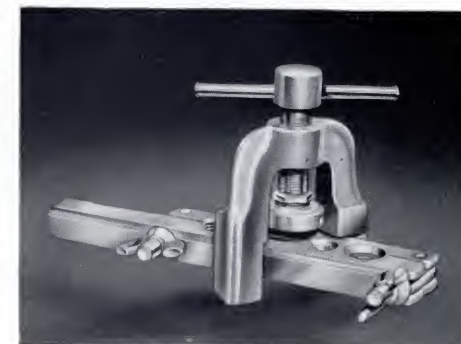
A compact flaring tool making 45° double flares in soft steel tubing (including Bundy Tubing). Also suitable for single or double flaring on soft copper or aluminium tubing.

Capacity: $\frac{3}{16}$ in., $\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in. and $\frac{1}{2}$ in. outside diameter tubing.

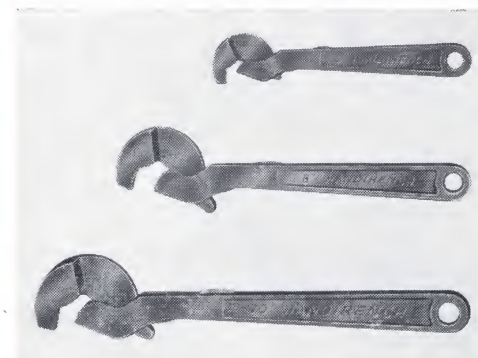
STANDARD PATTERN SINGLE TUBE FLARING TOOL

For flaring copper, brass or aluminium tubing. Self-aligning and simple to operate. Tube need not be removed.

No. 263. Designed for tubing $\frac{3}{16}$ in., $\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in., $\frac{1}{2}$ in. and $\frac{5}{8}$ in. outside diameter. With screw type flaring head.



HANDIRENCHES



No 231.
Length 6 in.
Capacity $\frac{1}{2}$ in.

No 232
Length 8 in.
Capacity $\frac{3}{4}$ in.

No 233
Length 10 in.
Capacity 1 in.

Spring loaded jaw gives "ratchet" action. Greater leverage increases grip of jaws. Drop forged from chrome vanadium steel.



HAMMERS



Replacement Hammer Shafts

Replacement shafts are available for all hammers—each complete with wedge.

Type A — for No. 530 Hammer.

Type B — for No. 570 Hammer.

Type C — for all other hammers.

No.	Type	Faces	Weight oz. grams	Shaft length in. mm.	Round face in. mm.	Square face in. mm.	Head length in. mm.
560	Bumping	Flat	14 396	12 305	1 3/8 35	1 1/2 38	4 102
561	Bumping	Crowned	14 396	12 305	1 3/8 35	1 1/2 38	4 102
562	Light Bumping ..	Crowned	10 1/2 290	12 305	1 1/2 32	1 1/4 25	3 1/2 89
563	Dinging	Crowned	11 311	12 305	1 1/2 32	1 1/4 25	6 152
565	Cross Pein and Finishing	Crowned	10 1/2 297	12 305	1 3/8 38	—	6 152
566	Pick and Finishing	Crowned	10 1/2 297	12 305	1 3/8 38	—	6 152
568	Light Bumping ..	Flat	10 1/2 290	12 305	1 1/2 32	1 1/4 25	3 1/2 89
569	Shrinking	Cross Milled	14 396	12 305	1 3/8 35	1 1/2 38	4 102
570	Fender Bumping ..	—	32 907	14 356	—	—	8 203
530	Magnetic Trim ..	—	7 198	11 279	—	—	4 102
533	Heavy Dinging ..	Flat	20 566	12 305	1 3/8 36	1 3/8 35	5 1/2 145
535	Reverse Curve ..	Radius	12 340	12 305	1 3/8 30	1 1/2 27	4 102
539	Heavy Shrinking	Milled and Flat	18 510	12 305	1 3/8 48	1 1/2 42	4 109

NEW HAMMERS



No 533 Heavy Dinging Hammer, similar to the popular No. 563 but with larger faces and greater weight—20 oz. Round and square faces ground flat to minimise stretching of metal.

No 535 Reverse Curve Hammer, for unusual contours on many modern body designs. Both faces have $\frac{15}{16}$ in. radius—vertical on the round face and horizontal on the square face. Specialists will appreciate the value of a hammer of this type.

No 539 Heavy Shrinking Hammer A superior combination hammer with square face deeply serrated and round face ground flat for finishing work. This is a high grade hammer, fully machined to give a careful balance. Produced to meet the demand for an "American" type shrinking hammer in contrast to the No. 569 which is of the "Continental" pattern with shallower serrations.

SPOONS AND BUMPING FILES



Spoons

No.	Type	Weight lb.oz. grams	Length in. mm.
573	Pry and Surfacing	2 4 1020	12 305
574	General Purpose	2 4 1020	11 279
575	High Crown	3 6 1530	7 1/2 190
578	Surface	3 6 1530	13 1/2 343
579	Drip Moulding	2 8 1133	9 228
510	Thin Spoon	10 283	12 305

Bumping Files

No.	Type	Weight lb.oz. gr.	Length in. mm.
594	Flat	1 6 623	12 305
595	Half-Round	1 4 566	12 305



DOLLIES

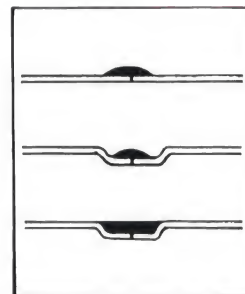


NEW SHRINKING DOLLY



No. 559 Shrinking Dolly for sinking welded seams and reducing stretched areas.

1. Welded seam standing proud on panel.
2. Weld beaten into groove on shrinking dolly—about $\frac{1}{8}$ in. below surface.
3. Panel filled and finished.



Stretched areas can be similarly beaten into groove of shrinking dolly reforming original contour and providing a rib of reinforcement.

LONG REACH DOLLIES

Patents applied for in U.K. and ABROAD



Designed to meet the problems of modern car bodies created by the use of double skins, boxed-in sections, etc.

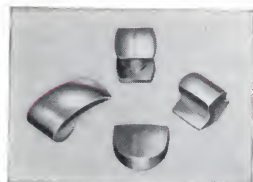
This tool obviates the necessity for cutting large access ports and subsequent re-welding, thus avoiding distortion and structural weakness. A maximum $1\frac{1}{4}$ " clearance hole permits entry of the shaft with button dolly attached. Larger dollies are fitted to shaft through the normal access ports.

No.	Description	Dimensions
542	Shaft	Length: 12½ in., 318 mm.
544	Button Dolly	Diameter: 1½ in., 32 mm.
545	Flat Dolly	Length: 4 in., 102 mm.
		Width: 2½ in., 58 mm.
546	Round Dolly	Diameter: 2½ in., 64 mm.

No.	Type	Weight lb. oz. gr.	Length in. mm.	Width in. mm.	Depth in. mm.
551	Double end ..	3 4 1473	3 79	2 64	3 95
552	Utility ..	3 0 1360	2 73	2 70	2 54
553	Curved ..	3 6 1530	5 137	2 64	2 54
554	Heel ..	2 4 1020	2 64	3 83	1 35
555	Anvil ..	4 0 1814	5 146	2 67	5 130
556	Dome ..	3 5 1501	3 98	2 64	5 133
557	Round ..	1 10 736	2 54	2 54	2 64
558	Toe ..	3 0 1360	5 127	2 60	1 32
559	Shrinking ..	3 0 1360	5 157	2 60	1 32

Set No.	Contents
540	Shaft No. 542, Button Dolly No. 544, Flat Dolly No. 545, Round Dolly No. 546, Bumping Hammer No. 561, Shrinking Hammer No. 569, in metal case.
541	Shaft No. 542, Button Dolly No. 544, Flat Dolly No. 545, Round Dolly No. 546, in carton.

BASIC DOLLY SET



No. 550. Set of Four Dollies comprising one each Nos. 551, 552, 553 and 554 in carton.



**LONG REACH
DOLLY
APPLICATIONS**



MISCELLANEOUS PANEL TOOLS



No.	Description	Weight lb. oz. gm.	Length in. mm.
576	Flange Tool	1 8 679	15 381
577	Setting Wrench	1 4 566	11 279
590	Fender Flange Plier	1 0 453	12 305
591	Door Handle Pin Remover	4 113	6 152
589	Door Handle Spring Clip Remover	3 85	8 203
592	Drip Rail Forming Plier	1 0 453	8 222
564	Round Mallet dia. 2 1/2 in., 63 mm.	1 6 623	11 1/2 292
567	Bossing Mallet, dia. 2 1/2 in., 57 mm.	1 0 453	11 1/2 292

Mallet heads in lignum vitae

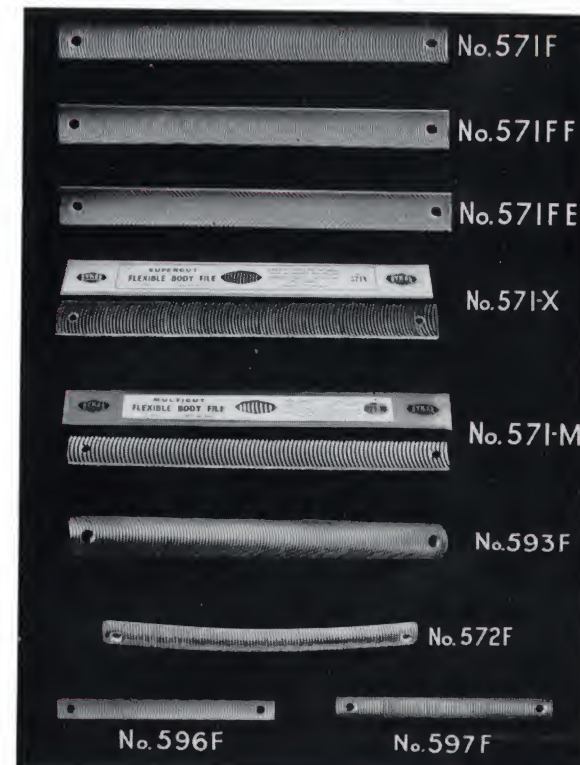
BODY FILE HOLDERS WITH BLADES



No.	Type	Weight lb. oz. gm.	Length in. mm.
571	Adjustable Holder with No. 571-F Blade	2 14 1303	14 356
593	Half-round Holder	1 8 679	14 356
572	Radius Holder	1 4 566	12 305
521	Half-circle Holder	1 4 566	14 356
522	Special Curved Holder	1 2 510	14 356
596	Flat File Holder	8 226	8 203
597	Half-round Holder	8 226	8 203

All Body File Holders supplied complete with 1 Body File Blade

BODY FILE BLADES



No.	Type	Length in. mm.	Teeth per in.	Use with Holder
571-F	Flat Flexible	14 356	9	571
571-FF	Flat Flexible	14 356	13	571
571-FE	Flat Flexible	14 356	17	571
571-X	Flat Flexible (Super- cut)	14 356	8	571
571-M	Flat Flexible (Multi- cut)	14 356	6 1/2	571
593-F	Half Round	14 356	9	593
572-F	Half Round Radius	12 305	9	572
521-F	Half Circle	14 356	8	521
522-F	Special Curve	14 356	8	522
596-F	Flat Minifile	8 203	9	596
597-F	Half Round Minifile	8 203	9	597

All File Blades are supplied in cartons of 12.

SUPERIOR QUALITY FILE BLADES

No. 571-X 'Supercut' 8 teeth per inch.
A new Body File giving increased
flexibility and faster cutting.

No. 571-M 'Multicut' 6 1/2 teeth per inch.
A high-grade File for all body work.
Specially suitable for use on Plastic Filers.

No. 571-X and No. 571-M supplied in individual sealed wrappers in cartons of twelve.



PANEL BEATING

MASTER SET



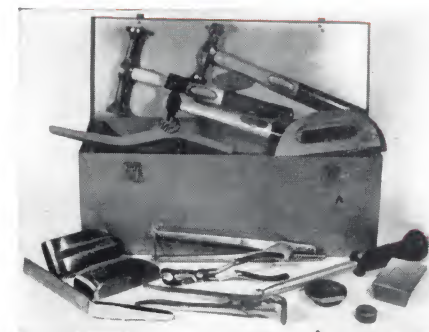
Storage panels are 2 ft. 6 in. x 1 ft. 6 in. and they have ear plates for fitting to wall.

COMPLEMENTARY SET

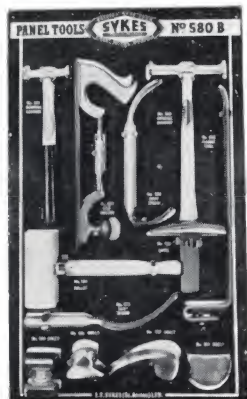


TOOL SETS

SPECIALIST SET



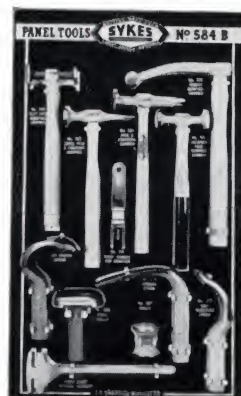
Each tool fits on the panel and its removal reveals a shadow outline to indicate absence.



No. 580. Master Body Set in metal case comprising Dollies Nos. 551, 552, 553, 554 and 555; Hammers Nos. 562, 563, 564; Spoons No. 573 and 574; Flange Tool No. 576; Adjustable File Holder No. 571.

No. 580-B. Master Body Set on wall storage panel. Identical contents to No. 580 set.

No. 580-C. Master Body Set Kit of Tools only supplied in carton.



No. 584. Complementary Body Set in metal case comprising Dollies Nos. 556 and 557; Hammers Nos. 560, 561, 565, 566 and 570; Spoons Nos. 575, 578 and 579; Setting Wrench No. 577 and Door Handle Tool No. 591.

No. 584-B. Complementary Body Set on wall storage panel. Identical contents to No. 584 set.

No. 584-C. Complementary Body Set. Kit of Tools only supplied in carton.



No. 585 Specialist Body Set in metal case comprising Dollies Nos. 558, 559, 542, 544, 545, 546; Hammers Nos. 533, 535, 569; Spoons Nos. 510 594; Fender Flange Plier No. 590; Drip Moulding Plier No. 592; Door Handle Clip Remover No. 589 and Mini-File No. 597.

No. 585-B. Specialist Body Set on wall storage panel. Identical contents to No. 585 set.

No. 585-C. Specialist Body Set. Kit of tools only supplied in carton.

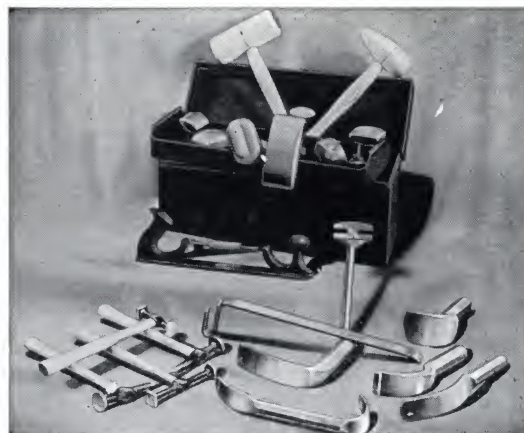
SMALL BODY REPAIR SETS



No. 581. Service Station Body Set comprising Dollies Nos. 551, 552, 553 and 554, Hammer No. 562 and Body Spoon No. 573 in carton.



No. 582. Service Station Body Set. Identical contents to Set No. 581 but supplied complete in metal case.



No. 583 SUPER BODY SET

This fine set includes twenty items in all: Six panel dollies Nos. 551, 552, 553, 554, 555, 556; four hammers Nos. 562, 563, 565, 566; two mallets Nos. 564, 567; five body spoons Nos. 573, 574, 575, 578, 579; flange tool No. 576; setting wrench No. 577; and adjustable file holder No. 571 complete with flexible blade. Supplied complete in metal case with lift out tray.

No. 583-C Super Body Set. Assortment of Tools as above but supplied in carton.

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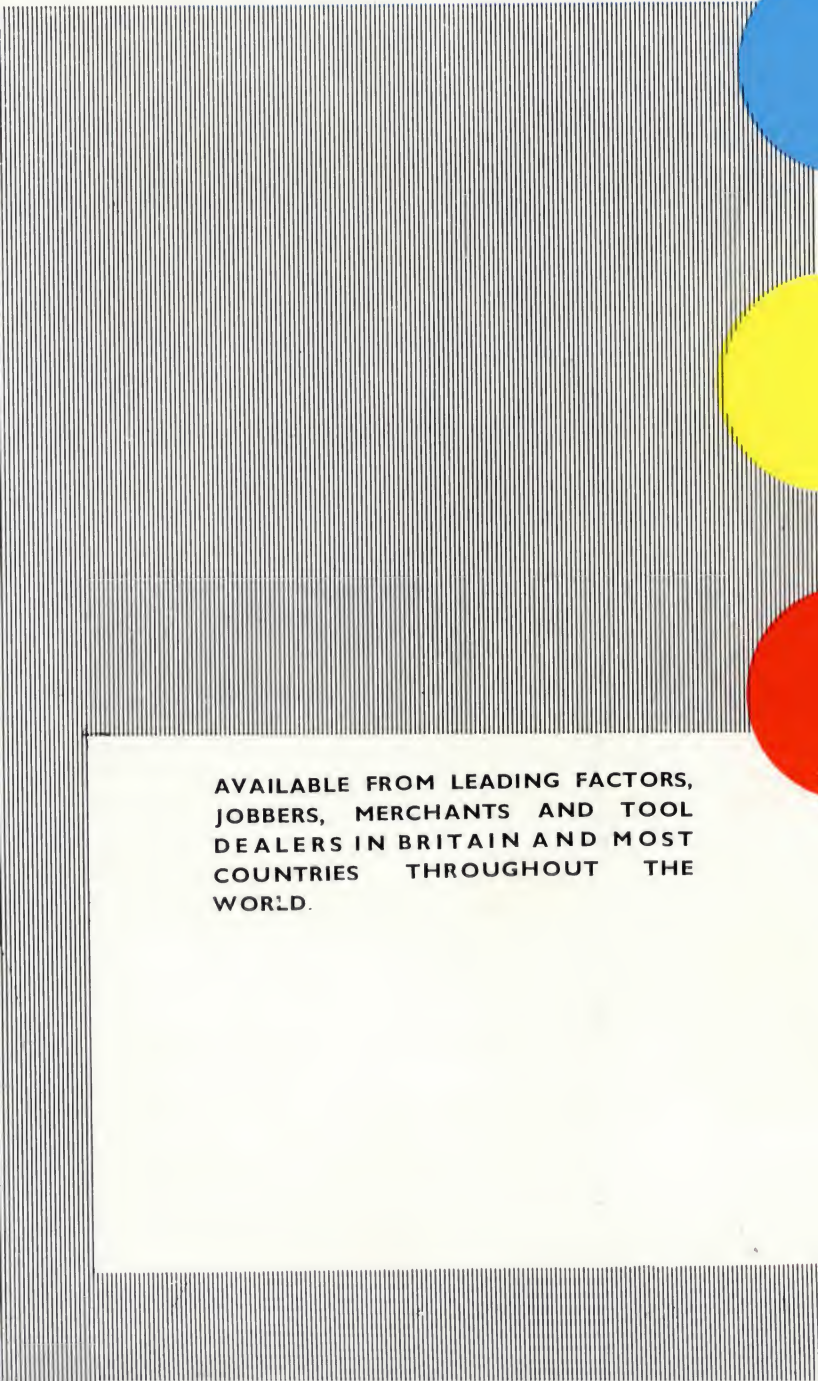
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